



Value, Information, and Critically Conscious Evaluation

On How Addressing Environmental Issues Requires Cultural Creation

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Dissertation for the Master in Environmental Economics and Management
at the Faculty of Economics of the University of Porto

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September, 2017

Biographical Note

Mohamed Adnan Aboulaïch, born in Tetouan, Morocco on the 16th of September 1990. Having concluded the baccalaureate in 2008, majoring in Mathematics and Physics, he graduated in 2012 with a Bachelor of Science in Engineering and Management Sciences from the School of Science and Engineering at Al Akhawayn University in Ifrane, Morocco. After a professional experience of three years, he started pursuing a Master degree in Environmental Economics and Management from the Faculty of Economics at the University of Porto, Portugal.

Abstract

Environmental crises, and other global challenges, reveal ongoing conflicts of value. This essay contributes to the examination of the role of the assumptions underlying perceptions of value in the conflicts of competing value systems. The objective of this study is to try to understand how the construction of these value structures confines human interactions, and how such interactions can be emancipated. Through a historical, material, and dialectical approach, assumptions and processes hidden behind notions of value are scrutinized. This investigation suggests that concepts of value conceal a complex process of evaluation of potential interactions based on uncertainty-eliminating information accumulated historically from past interactions. Evaluation is made possible through knowledge arising from Culture. The implication of this is that critically conscious evaluation has the potential of generating innovative interactions enabling human integration in the Environment. However, access to the common pool of knowledge, symbolized by Culture in all its representations, must be fostered.

JEL-codes: *Q50, Z10*

Key-words: *value, evaluation, information, Culture, Environment, critical consciousness*

Resumo

As crises ambientais, e outros desafios globais, revelam contínuos conflitos de valor. Este ensaio contribui para a avaliação do papel das suposições, implícitas nas noções de valor, nos conflitos entre sistemas de valor concorrentes. O objetivo deste estudo é tentar compreender como a construção de estruturas de valor confina as interações humanas, e como essas interações podem ser emancipadas. Através de uma abordagem histórica, material, e dialética, suposições e processos escondidos atrás de noções de valor são escrutinadas. Esta investigação sugere que os conceitos de valor ocultam um complexo processo de avaliação de potenciais interações baseadas em informação eliminadora-de-incerteza acumulada historicamente de interações passadas. A avaliação é tornada possível através de conhecimento decorrente da Cultura. A consequência disso é que a avaliação criticamente consciente tem o potencial de gerar interações inovadoras permitindo a integração humana no Ambiente. Contudo, o acesso a este fundo comum de conhecimento, simbolizado pela Cultura em todas as suas representações, deve ser impulsionado.

Códigos-JEL: *Q50, Z10*

Palavras-chave: *valor, avaliação, informação, Cultura, Meio Ambiente, consciência crítica*

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Introduction

This investigation started from what seemed years earlier as a random collection of unconnected questions that suddenly converged into a sort of an existential question. Why should anyone care about the Environment or anything else if we are nothing but a random collection of particles in an already determined everlasting race against entropy competing to replicate what was achieved by pure coincidence in an ultimately meaningless and purposeless universe?

Answering this question is, of course, not the goal of this essay. But it does, however, offer a direction of research that starts from the simple observation that there are people who care about the Environment and some who don't. So, what is it about the Environment that some value and others don't? This leads to another question: what is value, anyways? We hear the word all around: in the speech of politicians talking about national values, clerics preaching religious values, and economists predicting market values. So, what is this ambiguous notion of 'value' really about? This quickly escalates to a realization perfectly illustrated by David Harvey:

If you think you can solve a serious environmental question like global warming without actually confronting the question of by whom and how the foundational value structure of our society is being determined, then you are kidding yourself. (2010, p. 21)

This attempt to expose the building blocks of value structures reveals a deeper challenge regarding the methodology to be chosen that should acknowledge conflicts that arise between theoretical models and reality.

"The economists are in a dismal state precisely because they look upon their discipline as a science whereas it is actually no more than a sophisticated apology for the social and economic status quo. They evidently do not perceive the real nature of their profession and thus are deeply disturbed by the growing discrepancy between their theories and reality." (Mattick, 1978, p. vii)

Theories then diverge from reality, so the methodology of research and description should take that into consideration. It is crucial then to start by a description of some of

the ways the nature of reality is perceived differently and the implication of that on the methodology of this research and the question of value.

What is value? This question seems to presuppose that value is something static, or at least that it has some sort of a hidden fixed form, and that there is an already existing universal form of value waiting for an adequate theory to uncover it. Such assumption is linked to a particular view of reality. In ancient Greece for example, Parmenides of Elea, a pre-Socratic philosopher, postulated that ‘what-is’ is one, whole and uniform, timeless, unchanging, and perfect. Or at least, this is what seems to be understood by many analyses of what was salvaged from his poem, *On Nature* (Palmer, 2016). Another interpretation came to see change as an illusion and to describe some level of reality where forms are fixed and perfect. It is this particular reading that will, according to David Graeber (2001), define Western philosophy and science for the next couple of millennia.

One benefit of visualizing such level of reality that is free from change is that it enables us to discern graspable ‘things’, biological and non-biological, material and nonmaterial alike. We construct, accordingly, models that are made from fixed perfect forms. Those models are the basis of modern science and, through it, a technology that gives us immense capacity to change reality! (Graeber, 2001)

But, wasn’t reality supposed to be unchanging and perfect? Well, that is exactly how substituting reality for the model creates problems, replies Graeber (2001). It turns out, the whole trick of ‘unchanging’ lies in its connection to ‘timeless’ since change happens in time. One thing then is to remove time, in its historical sense, to study a mechanism to the best we can; another thing is to see reality and try to interact within and with it as if time and history don’t actually exist.

Now it is quite possible to believe that the Ultimate Truth¹ is one, timeless, and unchanging but it is hardly the place to debate that. It is mandatory, however, to argue that a reality that we would wish to understand and interact with has to be, by definition, time-bound (i.e. historical) and thus changing. Another pre-Socratic Greek philosopher, Heraclitus of Ephesus, is believed to have described reality, accordingly, as one of

¹ or Reality, What-is, etc.

continuous flux (Graham, 2015). Thus, apparent objects are, in fact, patterns of change. This gives us a beautiful dynamic approach but it leaves us with no ability to draw precise borders or distinctions (Graeber, 2001).

We end up then with two ways through which reality reveals itself to us or, one might say, two different tools to view reality. One with which we are able to establish momentary boundaries separating between ‘things’ that interact, losing in the process the dimension of historicalness where change and transformation are possible. The second dissolves ‘things’ into an ever-changing existence leaving it hard, therefore, to recognize interactions between such evanescent ‘things’. This is, perhaps, the reason why Karl Marx’s method, that attempts to juggle between the two, is called historical materialism. It is materialism insofar the ‘things’ it describes are material², and it is historical as long as it recognizes time and change. But this approach is also dialectical and not causal. It deals with dialectical relations and processes. Commenting on Marx’s method, David Harvey (2010) remarks that a process is not a ‘thing’. A ‘thing’ is a representation of the process that is in turn objectified in the ‘thing’.

Attempting to describe such dynamic, complex, and dialectical reality through seemingly static words and linearly flowing text proves to be a daunting task. Taking that into consideration and given the existential nature of the question from which this investigation starts, this essay attempts to tell a meaningful story trying to cover, through what could appear at times as an intricate language, the various interactions in play from different perspectives.

One of the objectives of this investigation is to try to understand how assumptions underlying concepts of value bound human interactions. The second is to imagine how, by revealing the complex processes concealed behind these ideas of value, interactions can be emancipated. The relevance of this topic lies in the possibilities it could potentially open for understanding the reasons that lead to environmental conflicts, how they originate in conflicts between value structures, and how environmentally-sound interactions can be better conceived. Through a historical, material, and dialectical approach, assumptions and processes hidden behind notions of value are thus scrutinized.

² in the very wide sense of the word

The first chapter of this work digs in the notion of value in a bid to reveal the apparent commensurability of things, the reason behind their divergence, and the knowledge arising from interactions that make value a feature characteristic of Culture. The second chapter is a survey of some of the different ways value structures limit interactions by confining knowledge. The third chapter, on the other hand, is an attempt to imagine how the emancipation of the process of evaluation from the value structures confining it can lead to generating critical, conscious, and innovative interactions creative of Culture. Interactions that would lead us to integrate in our Environment.

1. Value as a specificity of Culture

“Out of touch with my roots in nature, I would be adrift, alienated and separated, and I would experience the apparent meaninglessness of life so widely felt in this age of technological and material progress.”

(Hines, 1991, p. 28)

Value is undoubtedly a very slippery notion. In his book *Toward an Anthropological Theory of Value*, Graeber (2001) observes how anthropologists have generally approached the notion of value from three different angles: economic, sociological, and linguistic. From an economic perspective, “value” is understood as a measure of the degree to which a certain object is desired. While sociology focuses on “values”, in the plural form, seen as conceptions of what is ultimately desirable in human life. On the other hand, “value” is generally seen by linguists as meaningful difference.

In our times, many social ‘values’ can be packaged and exchanged for their economic ‘value’, social security as an insurance policy or prestige in the form of a newly released electronic gadget, and this seems to be extendable to almost everything (Graeber, 2001). In this way and to the dismay of many, a tangerine can be exchanged for prestige in the market, revealing their surprising commensurability.

But is there any connection between the value of a tangerine and that of prestige, peace, or creativity, between material and social values? Where does the material end and where does the social begin? How can we bridge between two, seemingly, very different perspectives? And what could be a possible link between ‘value’, ‘values’, and ‘meaning’?

1.1. Value and the deceptive commensurability of ‘things’

Let us start arbitrarily from the tangerine and the notion of economic value. Let us then see if we can discern the material origin of economic value searching for the source of the apparent commensurability of ‘things’.

A tangerine, as we all seem to recognize, is an object or a ‘thing’. When it comes with a money-price it becomes a commodity. We generally assume that the money-price of a

commodity is its value. That is why economists study the economic value using money as a common denominator. Thus, since they seem to take the apparent equivalence of value and money for granted, we will have to skip for now the view of neoclassical economists who see value originating in consumer preferences (Hornborg, 2014), and look instead at the labor theory of value examining where it could lead us.

In the *Wealth of Nations*, Adam Smith postulates that, in fact, labor, “never varying in its own value, is alone the ultimate and real standard by which the value of all commodities can at all times and places be estimated and compared. It is their real price; money is their nominal price only” (1776, p. 37). David Ricardo further developed those remarks into a labor theory of value that was driven by Karl Marx in a completely different direction (Harvey, 2010).

To build his theory, Marx (1867) compares commodities to other objects. The difference he notices is that commodities involve exchange which means that they are somehow commensurable with one another. However, this commensurability does not seem to originate in their material properties. Such material variance is what makes commodities just like other objects different in their utility. But when commodities are exchanged they differ only quantitatively. This ability to equate different amounts of different commodities is what gives them a twofold character, as opposed to other objects.

So, a commodity has a ‘use-value’ which represents its utility that arises from its material properties and makes it qualitatively different from other commodities. Yet, the ‘value’ of a commodity which makes it commensurable with other commodities is that one aspect that all commodities share and that is, in Marx’s view, being a result of human labor taken in the abstract as a social substance. The magnitude of the value of a commodity is, hence, determined by the amount of socially necessary labor-time and that is the labor-time “required to produce an article under the normal conditions of production, and with the average degree of skill and intensity prevalent at the time” (Marx, 1867, p. 20). The money-price of commodities is, on the other hand, just an advanced ‘form of value’ or ‘exchange-value’ (Marx, 1867).

So, Marx's notion of 'value' appears to differ from that of Ricardo's by the mere addition of the terms 'socially necessary' (Harvey, 2010). But, by doing so, Marx clearly puts the notion of value back in the social realm. The problem is that when he talks about value, what he seems to describe is the value of commodities, the sort of 'things' that are produced for exchange (i.e. for others). James Carrier seems to extend the notion of commodity a little further to "include things, whether material or not, that are not produced in the conventional sense but that can be appropriated and used for commercial gain." (2010, p. 674). The example he gives is one of a hotel set in a spectacular location commodifying the view from the veranda by making it a "part of what is being sold in market transactions even though the hotel did not produce the scenery" (Carrier, 2010, p. 675).

By stretching Marx's notion of commodity, it becomes unavoidable to reassess that which in his view turns something into a commodity: 'value'. The view from the veranda is definitely a 'use-value'; the fact that it can be exchanged shows that it has a 'value-form'; but where is then the 'value' of such a commodity if there is no human labor embodied in it?

All in nature are interdependent: my little rain forest cannot be bounded and separated from the Rubber Tree. It depends on the Rubber Tree. As I do. People are part of nature, aren't they? But accounting, like any language, names, bounds and thus separates. (Hines, 1991, p. 27)

In this quote from her short article titled *On Valuing Nature*, Ruth Hines is giving us a hint towards the root of the matter. When Marx sets to describe a commodity as having a twofold character, he uses language to name, bound, and separate between its 'use-value' and its 'value'. The use-value of a commodity portrays its utility and, for him, this is determined by the objective characteristics of the thing. The value of the commodity is, on the other hand, a manifestation of the subjective human creative labor (Marx, 1867).

By separating between what he sees as objective and subjective, Marx is, in fact, separating between what he deems to be human and what is not. For him, it is human labor that adds value and that labor, and only that labor, is what is being abstracted

when commodities are exchanged. It is human labor that turns wood into a table (Marx, 1867). Moreover, a table is a commodity because it is wood plus human labor in the abstract. Wood exists in nature but the labor that goes into making it a table is of the realm of society. In separating between the objective and the subjective, the natural and the social, Marx is actually separating between people and nature. Thus, comes to mind Hines's provocative question: aren't people part of nature?

Now, let us go back to Carrier's example of the spectacular 'scenery'. What is in that scenery that makes it commensurable with other commodities? What is the one attribute common to the production of the physical scenery and the human production of a table, the one thing that is expended in both cases?

If we forget about the notion of 'socially necessary' for a bit, and abstract the labor that goes into the production of a table from being "a productive expenditure of human brains, nerves, and muscles" (Marx, 1867, p. 24) to being an expenditure of energy, we might have then a common denominator. After all the expenditure of human brains, nerves, and muscles is an expenditure of energy; therefore, labor is an expenditure of energy (Costanza, 1980). The table becomes, thus, the result of the aggregate of the energy expended in its production throughout the entire supply chain and the solar energy that feeds the trees from which wood is extracted. Being the result of energy expenditure is what the table and the scenery have in common.

Robert Costanza remarks that "usually, the energy required to produce labor and government services and the solar energy input to the economy are ignored by analysts. The former omission can be traced to the assumption that traditional primary factors of economic production – land, labor, and capital – are independent." (1980, p. 1219) He believes that they are not. Instead they are all results of qualitatively different forms of energy expenditure (Costanza, 1980). Alf Hornborg (2014) observes that for Costanza and Neo-Physiocrat ecological economists, value should be defined, consequently, by the quantity of embodied energy or other natural values. And in doing so, they are expanding in fact Ricardo's notion of value. What would happen then if we do so to Marx's definition?

By stretching the concept of labor and replacing it by the wider notion of energy, we are transferring some nuances of subjectivity from Marx's idea of 'value' to 'use value', and some of the objectivity in the other way around. The analysis we have followed so far shows us how the lines between these concepts are indeed very blurry. Marx may have committed a sin by separating people from nature, but his indulgence lies in that same chapter where he does so: "with reference to use-value, the labour contained in a commodity counts only qualitatively, with reference to value it counts only quantitatively, and must first be reduced to human labour pure and simple" (Marx, 1867, p. 25).

By expanding the concept of labor and replacing it by the energy "pure and simple", whatever the source it comes from and the form it takes, we have drawn the line between the 'use-value' and the 'value' of a commodity slightly differently than Marx but his description of the twofold nature of the commodity still holds. Moreover, we can now perceive this twofold nature in 'things', in general. That which makes a 'thing' of utility is its qualitative difference from the rest of 'things'; that which makes it commensurable when exchanged is the energy-time socially necessary for its production.

Driving the notion of 'value' this deep prompts us to start removing all the different boundaries we have established between commodities and 'things', and consequently, between humans and their societies, and nature. It may also prove to be very convenient to explain to us capitalism's incredible ability to commodify everything in its sight: social security as insurance policy, art and ideas as intellectual property, or self-esteem in a bottle of deodorant. But if energy is that one thing that makes the scenery, the tangerine, the table, the ideas of the heretic, and their producers be all reduced to ashes, energy alone would never be sufficient to recreate them.

1.2. Value and the diversity of 'things'

Capitalism's ability to reify everything into a commodity asserts this illusive quantitative commensurability of 'things' that we have revealed in the previous section by deducing, so far and as a first step, that the value of a 'thing' arises, partly, from the energy expended in its production. Yet, this does not expose the qualitative difference

that gives 'things' their utility or 'use-value' and lead them to being exchanged in the first place. What is then the origin of the uniqueness of 'things' and their diversity?

To answer that question, we can perhaps start by examining societies where such 'things' are exchanged without necessarily being quantitatively commensurable, societies where 'things' are not commodities. Graeber clarifies this based on the work of Christopher Gregory (1982) in comparing commodity and gift exchanges explaining that in the latter "the objects involved have a tendency to take on the qualities of people." (Graeber, 2001, p. 36) Gregory's remark can, in fact, point us towards the origin of the qualitative difference between 'things'. Graeber (2001) traces a line of thought that starts from Marcel Mauss who observed that there is always something from the personality of the giver that manifests itself in the gift. But what would happen if the gift is gifted again? Will it carry something from the personalities of the previous two owners?

Annette Weiner *apud* Graeber (2001), confirms that this is exactly what appears to happen in gift exchange, because the value of a thing seems to reflect in a way its capacity to accumulate history. It is the specific history of heirlooms that gives them their unique and thus valuable character. This seems to occur in every society since we can always "map out at least a rough continuum of types of objects, ranked according their capacity to accumulate history: from the crown jewels at the top, to, at the bottom, such things as a gallon of motor oil, or two eggs over easy." (Graeber, 2001, p. 34)

So, value suggests the ability of a 'thing' to accumulate history from its circulation; it also illustrates the expenditure of energy, over time, socially necessary for its production. But by talking about time, do we refer simply to the period over which energy is expended in the production of a 'thing'? And does history accumulate only from its circulation? Or can we combine the two ideas in one?

In fact, it seems that we can achieve that by pushing this relationship between the value of a 'thing' and its ability to accumulate history further. But the moment we do so, we will have to, once again, reexamine the boundaries we usually establish between nature and society, this time, from a historical perspective.

In an article titled *A Single Historical Continuum*, David Christian (2011) suggests that an extended examination of history that goes far beyond human history reveals the unifying aspect that is the increasing level of complexity of the Universe's most complex 'things'. It becomes then feasible to perceive society as not something that is separate from nature, but rather as a more complex manifestation of the same. Christian comments that "the general idea of increasing complexity can help us to think of galaxies, stars, planets, living organisms and modern human societies as different expressions of similar underlying processes of change." (2011, p. 16)

The question that emanates naturally from this is: what are these similar underlying processes of change that lead to increased levels of complexity of 'things', and consequently further expand their diversity? What makes a tangerine more or less complex than other 'things'? Christian explains how complexity is built "by accumulating, storing and disseminating information about how to make things that work" (2015, p. 67).

Information is then the other ingredient in the history that makes 'things' diverse. What gifts carry about their previous owners and what makes them unique is a historical accumulation of information that is different from that of other gifts. Through an analogous process, the DNA builds biological 'things' (Christian, 2015), it is a record of their specific history. A tangerine is a tangerine and not an orange precisely because of the information it has historically accumulated, and that is similar to that of the orange up to a certain level and different further from it.

Talking about information assumes the presence of a difference that "other entities can detect and react to", says Christian who clarifies that even an electron can "be said to detect and react to a proton through its electric charge." (2015, p. 66) In the same way, the proton detects and reacts to the electron. Information emerges then from a correlation of two differences (Christian, 2015) or, in other words, from the interaction of two 'things', an interaction that can be said to be dialectical.

Thus, behind the tangerine waiting to be sold in a supermarket, is an accumulation of information coming from the interactions that brought it there, those that lead to its

evolution as a tangerine and not as an orange, and all the interactions in between. Throughout that entire process, energy has been consumed.

So, the ‘use-value’ of ‘things’ portrays their qualitative difference. This qualitative difference arises from a historical accumulation of information that itself stems from dialectical interactions in which energy is expended. It is that same historical expenditure of energy that seems to provide ‘things’ with their apparent quantitative equivalence. We can then presume for now that the value of a ‘thing’ portrays a historical accumulation of information emerging from dialectical interactions in which energy is expended. Somewhere around there, there is still a social necessity to be revealed.

1.3. Value as the meaning of potential interactions

We have concluded the previous section by proposing that the value of a thing reveals a history of information gathered from dialectical energy-consuming interactions. This image enables us to erase the line drawn between society and nature. Society and its properties can thus be seen as that historical accumulation of information that recreates nature. Massimo De Angelis observes that “Humanity as a totality, in its metabolic exchange with ‘nature’, is not outside ‘nature’, but a moment of it.” (1996, p. 8) The social is a historical transformation of the natural, a qualitatively different rearrangement of the material, a rearrangement that arises dialectically.

This sounds as close as it can get to Marx’s dialectical method and historical materialism, a materialism that is not stiff, fundamentalist, nor determinist as Harvey (2010) and Graeber (2013) remind us. The latter describes then a weak materialism that understands that society “can never be separated from its concrete, material medium” (Graeber, 2001, p. 54) yet realizes that it generates a different level of complexity and that, as Christian puts it, “different levels of complexity appear to yield new ‘emergent properties’, properties that can not be deduced from understanding lower levels in the hierarchy.” (2011, p. 16)

To appreciate the new properties that emerge with the increased complexity of human societies requires digging deeper in Marx’s notion of the socially necessary. For Foster and Burkett (2016), this goes back to the dialectical theory of socio-ecological

conditions and crises developed by Marx and Engels. To talk about the socio-ecological implies a dialectical interaction between the two (i.e. the social and the ecological). If, as we have seen in the previous section, dialectical interactions give rise to information, and if both the ecosystem and society are complex sets of interactions, then from socio-ecological conditions emerges a gigantic body of interconnected information.

This network of mutually related information is what we call knowledge (Floridi, 2010) and it takes the form of “ecologically significant information [that] can accumulate within the memory of each community, within what anthropologists call its ‘culture’.” (Christian, 2011, p. 20) But Culture refers also the socially significant information (e.g. information about how one should treat another and so on). Resulting from these socio-ecological conditions and crises, Culture provides humans with an “increasing control over biospheric resources leading to increasing populations leading to increasing social complexity, in a powerful feedback cycle.” (Christian, 2011, p. 19)

Accordingly, this accumulation of ecologically and socially significant information that is Culture can be said to denote not just the interactions of humans with other humans but also with nature and, consequently, all the interactions that happen within nature. We can then expand Marx’s notion of social necessity to one of cultural necessity describing both the social and the ecological conditions that bound interactions. If value designates the accumulation of information from any of these interactions then value is cultural. Moreover, anything and every ‘thing’ that emanates from these interactions has cultural value.

This cultural value can be seen everywhere: in agriculture, the domestication of animals, the designation of ecosystems as natural parks, the naming of stars and the worship of planets, the baking of bread and the making of wine, and the exploitation and transformation of natural resources into commodities. All of that is susceptible to the powerful feedback cycle described by Christian. That is why Harvey reminds us that value is not constant but “subject to a powerful array of forces” and “to perpetual revolutionary transformations” (2010, p. 22). Cultural necessity is continuously changing. The pace of this cultural change is revolutionized and made much faster and powerful by ‘collective learning’ which stems from the human ability to “share

information with precision and in great volume through the gift of symbolic language.” (Christian, 2011, p. 19)

Through symbolic language, and other communication tools emerging with Culture, information is shared as a symbolic network of interrelations between conscious entities capable of conceptualizing this complex form of information that we call knowledge; information becomes then semantic (Christian, 2015). This means that value, being an accumulation of such information, is itself semantic. That is, value is related to meaning or, dare we say, meaningful. So, what is this meaning that value indicates?

Curiously, linguists often talk about the meaning of a word as its value. For De Saussure (1916) (*Cit.* Graeber, 2001), this value is negative; it can only be seen in comparison to other values. The meaning or value of a word should be understood by figuring out its place in a whole structure. This implies a difference between such values. Some anthropologists have borrowed this from linguists to describe value structures in which value can be defined, in general, as meaningful difference (Graeber, 2001). This echoes Donald Mackay’s (1969) remark that “information is a distinction that makes a difference.” (*Cit.* Floridi, 2010, p. 23) If meaning, as we have seen so far, stems from representative webs of interrelated information, then meaning implies a set of distinctions that make difference. These distinctions, mirrored by information, are reflected then in value, so what do they entail?

Christian explains that “information reduces uncertainty by selecting one of several possible realities.” (2015, p. 66) That is the distinction that makes the difference. He gives an example of how a molecule of DNA with billions of rungs, excluding each three out of four possibilities, excludes as a whole an almost infinite number of potential creatures. In this way, “from all the possible things that might have happened, a message selects a tiny, not-easily-predicted sub-set, then it eliminates a vast number of other possibilities and a huge amount of uncertainty.” (2015, p. 67)

Thus, information, emerging from past interrelations, builds the future by eliminating uncertainties. It is reasonable to think of the value of a ‘thing’ as an illustration of how, out of an infinite number of potential ‘things’, a ‘thing’ comes to existence by

eliminating uncertainties based on information accumulated through past interactions. “It is value, then, that brings universes into being”, observes Graeber (2013, p. 231).

But if, as Harvey (2010) points out, a ‘thing’ is itself a representation of a ‘process’, wouldn’t that mean that what is brought into being by this accumulation of uncertainty-eliminating information are actually the ‘processes’ that culminate into ‘things’? Perhaps, this is what prompts Graeber to ask what if “what is ultimately being evaluated are not things, but actions?” (2001, p. 49) For him, value is the importance or meaning of actions. For us, and not to lose sight of the dialectical spirit of value, it could be helpful to consider explicitly the reciprocal influence that actions lead to. We can then argue that value is the meaning of interactions and, precisely, potential ones.

So, to summarize what we have seen so far, value is cultural. This cultural value illustrates the meaning of potential interactions. This meaning is shared as knowledge representing networks of symbolic mutually related uncertainty-eliminating information that emerges from past energy-consuming interactions and serves to generate future ones. That is why value embodies this information accumulated from past energy-consuming interactions that eliminates uncertainty and serves to generate future ones. Or, in less words, value denotes the knowledge generative of future interactions by eliminating uncertainty based on past ones.

2. Interactions and the assumptions of value structures

We concluded the previous chapter by proposing that value represents the knowledge generative of future interactions. Of course, what really matters about that value are those future interactions and how to generate them, the ‘how’ represented by the said knowledge. This knowledge appears to be restricted by assumptions pertaining to different value structures. So, what is the relationship between future interactions and the confined knowledge on which value systems are built?

2.1. Constructing value structures on confined knowledge

At the moment when future interactions are enduring in the realm of potentiality, they are object of desire. The knowledge representing past interactions not only eliminates uncertainties about the possibilities of potential interactions but also shapes their desirability. Meaning becomes then purpose. That is how value, as the meaning of potential interactions, is the symbol of the meaningful story that turns knowledge into desire, motivating consequently future interactions. These symbols, as Graeber realizes, are “representations of the importance of certain forms of action that become objects of desire that, as such, play a critical role in motivating those very forms of action that they represent.” (2013, p. 225)

This relationship between value as the meaning of potential interactions and motivation brings to mind the concept of ‘will to meaning’ developed by Viktor Frankl (1969) responding to the ‘pleasure principle’, and ‘will to power’³. He saw the last two as derivatives of the first. For him, pleasure is merely the outcome of fulfilling meaning and power is nothing but means to that end. “Only if one's original concern with meaning fulfilment is frustrated is one either content with power or intent on pleasure.” (Frankl, 1969)

This brings back the notion of power and struggle discussed at length. “The history of all hitherto existing society is the history of class struggles”, declare Marx and Engels in *The Manifesto of the Communist Party* (1848, p. 14). However, Frankl’s remark can point us towards a different type of struggle. Meaning, existing at first in potentiality taking the form of desire, is defined through power struggles. Graeber observes how “in

³ Frankl’s *logotherapy* based on will to meaning, together with Sigmund’s Freud *psychoanalysis* founded on his pleasure principle, and Alfred Adler’s *individual psychology* employing Friedrich Nietzsche’s ‘will to power’, form the three Viennese schools of psychotherapy.

the end, political struggle is and must always be about the meaning of life.” (2013, p. 228)

This can help us expose how value affects interactions by shaping desires, which itself is done by molding knowledge. When confined, knowledge becomes the assumptions on which different value structures are erected and that serves to guide interactions. That is what seems to happen with social and ethical values systems. Graeber (2001) describes Clyde Kluckhohn’s theory of values orientation that looks at values as some sort of answers to existential questions, directing the conceptions of what one is ought to want by assumptions about the universe and human nature. That is why sociologists refer to ‘values’ as conceptions of the desirable. These social and ethical values are not just abstract notions but rather practical philosophies of life that have a direct effect on the behavior of people (Graeber, 2001). The assumptions about the universe and human nature that they are built on eliminate uncertainties about what could have happened in the past and in doing so eliminate uncertainties about what is possible but also what is desirable in the future. As such values organize interactions (Harvie & Milburn, 2010).

Harvie and Milburn (2010) observe that the most desirable of the diverse forms of human interaction varies according to different systems of social and ethical values. Conflicts between these different systems of value pushes each one to declare itself as the rightful totality (Graeber, 2013), claiming often that there is no other alternative (Harvie & Milburn, 2010). Harvey (2010) suggests that this questions how and by whom such values are determined and that “that the manner in which these values are being imposed on us has to be unpacked.” (p. 21)

2.2. The assumptions of economic value that confine interactions

David Harvie and Keir Milburn (2010) observe that, just like other social value systems, economic value organizes future interactions. Graeber (2013) explains that the difference between value and values is the form taken by interactions, specifically human actions, or labor. “We speak of value when labor is commoditized. [...] The moment we enter the world where labor is not commoditized, suddenly we begin talking about values.” (Graeber, 2013, p. 224) An interaction such as caring for elders is part of social and ethical values; but it acquires economic value the moment it happens

in a nursing home where it is commoditized and is supposed to be exchanged for a salary.

Talking about economic value presupposes that this commoditized form of labor is, at least, the most desirable form of human interaction. This means that economic value embodies itself a system of social and ethical values that eliminates uncertainty about future interactions based on its own assumptions. It makes sense then to start unpacking the assumptions that such value structure is based on from this particular distinction between economic value and other values that refers to the commoditized form of labor. This is perhaps the reason why György Lukács (1971 [1967]) believes that it all goes back to the riddle of commodity-structure which itself indicates Marx's theory of 'commodity fetishism'.

For Marx (1867), as we have seen earlier, when two commodities are exchanged, their value embodies the labor of their producers. This labor appears then to them as if it was an objective attribute of the commodities. This 'phantom objectivity' is the result of an objectification of complex relations between people (Lukács, 1971 [1967]). But what this commodity-structure also hides is the objectification of individuals themselves.

A core tenet of the economic value system in its opposition to the other value structures is its belief in economic (or market) freedom that "gives people what they want instead of what a particular group thinks they ought to want." (Friedman, 1962, p. 15) For Milton Friedman (1962), and other liberals, freedom of the individual is the end value and is thus the purpose of any social arrangement. This echoes the principle of methodological individualism that reduces society to a mere collection of individuals (Graeber, 2001). So, instead of worrying about collective ideas of the desirable, the concern is what individuals appear to really want.

Friedman declares then that "underlying most arguments against the free market is a lack of belief in freedom itself." (1962, p. 15) Notice here how the assumptions carried by methodological individualism have reduced and equated the notion of freedom to one of economic freedom and autonomy, that would appear then to be 'natural' and desirable. These same assumptions characteristic of the economic value system are the ones that assigned the natural aspect to economic freedom and autonomy, observes

Carrier (2010). He explains that “the autonomous individual’s attributes, acts and effects are seen to spring, fetishistically, from within the person rather than from the interaction of the person and the contexts in which he or she exists.” (Carrier, 2010, p. 674)

This means that by commodifying human interaction, knowledge about the entire context of socio-ecological conditions and crises that leads to particular human interactions, and that we have described in the previous chapter, is hidden behind the veil of an apparent autonomy. An autonomy, although attributed to individuals, becomes alien to them, as Lukács (1971 [1967]) remarks, since it seems to be transferred to the products of their own interactions. Suddenly, ‘things’ acquire a sovereignty with which they govern the processes, interactions, and those same individuals that produce them. Marx remarks how to these individuals, “their own social action takes the form of the action of objects, which rule the producers instead of being ruled by them.” (1867, pp. 49-50).

Stripped of the knowledge about the contexts and conditions of their interactions, individuals watch their autonomy disappearing as they stare, together with the observing economists, in awe and devout veneration at the interaction of the products of their own interactions in the magical realm that is the market. This omission of knowledge and information in the assumptions of free market pundits is perhaps the reason why Carrier (2010) prefers to describe market transactions as ‘naturalized’ rather than ‘natural’. Moreover, it is that knowledge omission that naturalizes the market in which these transactions take place.

In this mighty market, often portrayed as a natural and universal law, when complex interactions are boiled down to commensurable economic values, public interest is supposed to be brought out by the invisible hand described by Smith (1776). Market transactions should then incontestably lead to optimal solutions because such solutions can only be “produced by the interactions of people each of whom possesses only partial knowledge”, as Friedrich Hayek (1945) remarks.

The problem with Hayek’s insightful remark, that pretty much every proponent of the economic value system seems to miss, is that the power of this economic value and its

prime achievement is actually concealing knowledge, the one supposed to generate the so called optimal solutions. By atomizing individual market players and treating them as particles isolated from their surroundings, the aim of methodological individualism is to conceal the high volatility and uncertainty surrounding extremely complex systems such as human beings and their Environment. Gregory *apud* Graeber explains that commodity exchange “should ideally be done quite impersonally; therefore, there is a tendency to treat even the human beings involved like things.” (Graeber, 2001, p. 36)

It seems then, as argues Louis Dumont (1971, 1977, 1986) (*Cit.* Graeber, 2001), that this principle of individualism is what gave birth to the economy in the first place. In societies whose wealth does not necessarily appear, following Marx’s description, as an ‘immense collection of commodities’, the work of some of Dumont’s students shows that “it is utterly absurd to talk about individuals maximizing goods. There are no individuals. Any person is himself made up of the very stuff he exchanges, which are in turn the basic constituents of the universe”, clarifies Graeber (2001, p. 19).

In contrast to gift exchange, Gregory (1982) (*Cit.* Graeber, 2001) reminds us that commodity exchange establishes a quantitative equivalence between the value of ‘things’. So, all of the accumulation of information from energy-consuming interactions, that we have discovered to be the reason behind the qualitative difference between ‘things’, has to vanish for them to be commensurable. This deceptive commensurability of things that is the basis of the economic value system is thus what paves the way for the economic notion of the maximizing individual who “is assumed to have a fairly clear idea what he or she wants out of life, and to be trying to get as much of it as possible for the least amount of sacrifice and effort” (Graeber, 2001, p. 6).

These limited perspectives imposed by the assumptions on which mainstream economic theory is founded are perhaps the reason why Polanyi (2001 [1944]) advocates a ‘substantive’ study of the economy that attempts to understand how people make a living, without being confined to the ‘formal’ approach that separates economy (i.e. household management) from the larger cultural sphere, just like it isolates people from their societies and Environment. This formal study of the economy limits decision-making to the rational choice between alternative uses of scarce means; a choice that is best made if everything is dissolved into a system of universal equivalence and left to be

governed by the unescapable divine law that is the market. One has to wonder what freedom are the rational, selfish, and insatiable automatons left with?

Theories that start from this idea of the maximizing individual make it very hard to perceive how such algorithmic decision-making process can lead to any form of innovation or creativity. On the other hand, top-down models of supreme social structures fail to describe exactly how society motivates human interactions, making it thus impossible to perceive how such structure could ever be transformed. Both approaches fall short of explaining change and transformation, observes Graeber (2001).

What this reveals is yet another set of assumptions that both economic and other social values seem to conceal, one that deals with the comparison of such values. We have seen so far that the role of economic value is to establish comparability through equivalence, as opposed to other forms of social and ethical values that negate such equivalence (Graeber, 2013). Gregory (1982) (*Cit. Graeber, 2001*) explains that this comparison of options, implied in the notion of value, takes place as either a ratio, or rank equivalence. While the first one is ubiquitous in the economic value system, the second is prevalent in other value structures to ascertain a sense of intrinsic superiority. What both methods of comparison have in common, however, is that their ultimate purpose is to establish which of the compared alternatives is more desirable (Graeber, 2001). But is this the only outcome a comparison can lead to?

According to O'Neil (1993) (*Cit. Martinez-Alier et al., 1998*), both methods of comparison represent a notion of strong comparability that implies strong commensurability in the first case employing a cardinal scale of measurement, and weak commensurability in the second one based on an ordinal scale as a common measure. We have seen, however, in the first chapter how the commensurability of values is illusory. In order for it to be established, historical accumulations of information have to be reduced to simple statements or, worse, vanish entirely.

Building their argument on this incommensurability of values, Martinez-Alier *et al.* (1998) describe a weak comparability that looks at the qualitative aspects of different alternatives. This would correspond to a third comparative method that Marilyn

Strathern (1987) (*Cit. Graeber, 2001*) adds to the previous two mentioned by Gregory, one that compares things to their origin. Graeber (2001) comments that what happens in this particular case is in fact a comparison of the origin of different ‘things’. If we revert back from the ‘things’ to the interactions producing them, as we have argued earlier, we recognize that when people talk about value, what they really mean is that they are comparing potential interactions based on the knowledge accumulated from past ones. Value as such is not just a simple static idea. Behind such an extremely ambiguous notion hides yet another complex process, that of the evaluation of alternative interactions.

One of the most important implications of this realization is that the reduction of the information that makes up the background of interactions to a mere static representation, reduces the complex process of evaluation itself to a simple choice between already existing alternatives. Consequently, future interactions seem to be confined to a repetition of one past interaction or another. But how can anything change at all then?

3. Critically conscious evaluation and potential interactions

Throughout this essay we have uncovered layer after another of representations hidden behind the concept of value. But we can scrutinize this notion of value even more to reveal the process that it shadows, that of evaluation of potential interactions. Reduced to either a rational maximization by economic value or completely annihilated by concepts of intrinsic superiority attached to social and ethical values, the process of evaluation is boiled down by imaginary value structures in general to a mere choice between predetermined alternatives. Unable to account then for the processes of change and transformation and explain innovation and creativity, we are left with the great dilemma of “how to move on from understanding people’s passive contemplation of the world to their active participation in it.” (Graeber, 2001, p. 16)

Let us start addressing this question by rehearsing the conclusions of the first chapter, this time illustrating the process of evaluation instead of the notion of value that symbolizes it. Evaluation is a cultural process. This cultural evaluation illustrates the meaning of potential interactions. This meaning is shared as knowledge representing

networks of symbolic mutually related uncertainty-eliminating information that emerges from past energy-consuming interactions and serves to generate future ones. That is why by evaluating this information accumulated from past energy-consuming interactions, uncertainty about how to generate future ones is eliminated. In other words, future interactions are generated as a result of eliminating uncertainty through the evaluation of the knowledge arising from past interactions.

Since we are dealing with the accumulation of information, evaluation can be seen as a process of learning. Christian (2015) distinguishes three different learning procedures (genetic, individual, and collective) that seem to follow similar patterns of change going through mechanisms of variation, selection, and replication. In genetic learning, “information accumulates as it is locked into the biochemical structures of DNA molecules. Most variations arise randomly during reproduction. Variations survive only if the DNA molecules they inhabit are copied.” (Christian, 2015, p. 69) By selecting against such variations, environmental pressures generate adaptive change.

Christian (2015) explains that individual learning traces similar paths with one major difference. It happens within individual consciousness instead of the outer world. Within this consciousness, information arising from past interactions is registered in the form of memories that vary with the variation of life experiences and the errors in encoding them. In this world of consciousness different than the outer world, alternative interactions exist in potentiality as memories from past interactions. Potential interactions are pondered against memories representing information about the Environment that is acquired from past experiences. The most fitting of these potential interactions to the modeled Environment is selected as the interaction that is realized in the outer world. Similar interactions are reproduced through the reinforcement of memories (Christian, 2015).

We can see how meaning arises from the potentiality of the interactions and the Environment existing in consciousness. Because they are selected intentionally in this potential world before being applied to the outer world, we can think of these potential interactions when realized as being purposeful. As a result, individuals adapt intentionally to their Environment through individual learning that is very fast and specific because new information is assimilated instantly from the particular

interactions of those individuals with their immediate surroundings (Christian, 2015). But the information accumulating through individual learning, confined to the individual consciousness, disappears with the disappearance of that consciousness. Christian contemplates how “individual learning is Sisyphean; it cannot accumulate information at time scales larger than a lifetime, so it does not lead to a long-term change. That is why it cannot generate what we humans call ‘history’” (2015, p. 71)

Collective learning starts by answering that particular challenge of the transient nature of individual learning and it does so by connecting those disperse individual learning processes (Christian, 2015). As such, networks of interrelated information that otherwise existed as memories in the confined space of individual consciousness are thus connected to each other in the vaster memory repository that we call Culture and that outlives ephemeral individuals. Muthukrishna and Henrich describe “how many human brains, which evolved primarily for the acquisition of Culture, together beget a collective brain.” (2016, p. 1) Information survives and accumulates historically in the form of myths, rituals, and cooking recipes, and is shared through language, books, art, and the internet. That is how “humans learn within teams of millions that include the living and the dead.” (Christian, 2015, p. 75)

This capacity of collective learning to continuously accumulate information depends on the existence of the common pool of knowledge it creates. The ability of the individual consciousness to access complex historical accumulation of information through simple keys guarantees its continuous contribution into refining this common knowledge. For example, De Angelis explains how “people learn through history and communication among them to refine their tastes for food, wine, etc.” (1996, p. 8) The more information, flowing from varied experiences arising from slightly different interactions, is outsourced to the common pool, the freer becomes individual consciousness in zooming on specific issues dividing them into ever smaller integrals and pixelating the information describing them. In this way, shared knowledge can become infinitely more precise and refined.

The more precise is the information, the more instantaneous and detailed becomes the functioning of the mechanisms of variation, selection, and replication. For instance, the alteration of one spice by mistake can lead to a slightly tastier dish. Such variation

would then be selected and replicated. That is how innovation emerges from mere serendipity, recombination, or incremental improvement (Muthukrishna & Henrich, 2016). This innovation is only achievable over collective learning that is made possible and accelerated through the continuous interaction with the common pool of knowledge, emerging from socio-ecological interactions, that is Culture. Muthukrishna and Henrich (2016) argue that such innovation is sped up by increasing rates of sociality, transmission fidelity, and cultural variance.

But the process leading to innovation and consisting of mechanisms of variation, selection, and replication can also be guided if these mechanisms are applied first to the knowledge existing within the conscious world (Christian, 2015). When potentially innovative interactions are pondered deliberately before being realized in the outer world, the resulting innovation can be said to be purposeful and the outcome of conscious evaluation. This evaluation is conscious and not only intellectual, because it also employs physical senses and emotional faculties⁴. Intellectually pondered alternatives emerge from and result in communication with the outer natural and social Environment, the world of Culture.

Furthermore, since this conscious evaluation involves an analysis of the advantages and shortcomings of specific information, it can be said to be critical. Of course, the more precise is the information, the more accurate is the analysis of the merits and limitations of potential interactions, and as such, the more critical is the conscious evaluation generating innovative interactions, and the more refined are those innovative interactions.

Thanks to this precision, the product of historical accumulation of information and knowledge, innovation that emerges from critically conscious evaluation enables compromise. Suddenly, it becomes possible for two people debating whether they should eat pizza or seafood to opt for a seafood pizza instead of one of them imposing their choice on the other. Innovative compromise can also appear, for example, in the form of a durable material that is also biodegradable, sustainable forms of agriculture, and energy provisions that are environmentally sound.

⁴ Marx (1844) (*Cit.* De Angelis, 1996) talks about the sensuous existence that is the collective of the five physical senses, practical ones (e.g. will, feeling, etc.), and so-called spiritual ones (e.g. thinking, contemplation, etc.)

The potential implications of this are described by Paulo Freire (2005 [1967]). By making choices that are ever more precise, the historical Subject not only adapts to reality but acquires the critical capacity to participate creatively in the process of transforming it. This means that, by being in and with our social and natural contexts and thanks to this critically conscious evaluation that can only progress with the development of Culture, we become capable, through our innovative and creative interactions, of integrating in our Environment.

Graeber (2001) describes values as the false coin of our own dreams. But if value can be seen as the meaning of potential interactions; if such interactions can be emancipated from the might of ghostly value systems; if they can become the outcome of critically conscious evaluation; if this evaluation is recognized as the product of the common pool of knowledge; if this can lead to “a sense of shared meaning [that] blurs the distinction between individual and group success” (Christian, 2015); and, borrowing the expression from William Morris, “if others can see it as I have seen it, then it may be called a vision rather than a dream.” (2003 [1890], p. 182)

Conclusion

The market and its economic value give the impression that everything is or can be commensurable. We have attempted to show in this essay that this apparent commensurability originates from the fact that everything is the result of energy expenditure. But things are different. We have argued that this variance emerges from the difference in the information that accumulates historically from the dialectical and material interactions that lead to their creation and in which the described energy is expended. Through these interactions society seems to shape nature. The social can be seen consequently as the recreation of the natural. Things can be described then, less abstractly, as resulting from socio-ecological conditions and crises from which a huge body of knowledge arises. This knowledge appearing in endless forms is what we call Culture. Value is thus cultural. As such, we have developed a view according to which value can be considered as being symbolic of knowledge originating in past interactions and eliminating uncertainties about future ones. That is how this cultural value symbolizes also potential interactions.

We have seen how from this world of potentiality, meaning seems to emerge and shape desire. But values vary with the variation of societies and their acquired knowledge. When this knowledge is confined in the form of assumptions, value structures are built on them. The meaningful and the desirable differ between the value systems they represent; and when they do, those structures collide. We have argued that economic value shapes the desirable form of interactions based on its assumptions and in doing so erects its own structure that clashes with the others. In this economic value system, the divine is the market that fosters public interest through an algorithm implemented by maximizing individuals. With other value systems, these reified structures are models that differ from reality because of their inability to account for change and transformation. We have attempted to show that this inability is the result of the reduction of complex processes of decision-making to simple choices between predetermined alternatives. Accordingly, the composite process of evaluation is hidden behind competing notions of value.

This process of evaluation, made possible through Culture and collective learning, can potentially be increasingly more precise, critical, and conscious. In doing so it opens

several doors. Democracy, for example, becomes then not just a matter of making simple choices between existing alternatives but can be converted into a participative process of collaboration and compromise that leads to innovation through creative interactions. These precise, critical, conscious, and creative interactions make it possible for us to situate ourselves in and with our Environment, or to integrate ourselves in it, in the words of Freire (2005 [1967]). Integration in the Environment replaces adaptation, adjustment, and attempts to save or preserve it as if it was something separate and alien. This, however, can only occur through the critically conscious evaluation generative of innovative interactions which itself is bound to the development of Culture. We believe then that any such outcome is only possible through the fostering of our common pool of knowledge. This is why addressing environmental and social issues requires participative, conscious, and critical creation of Culture.

Of course, this is a story; one that attempts to build meaning and conceive of what could perhaps be a more desirable way of arranging our interactions. It is however a story that recognizes that it is just a representation of reality that can be ever more precise and critical. One way this evaluation of the process of evaluation can advance is by further assessing the relationship between representative notions of value and uncertainty. Critical evaluation leads to more precise knowledge which means a larger body of information which indicates in turn a greater number of variables or potential interactions which means more uncertainty. Ironically, the same process that eliminates uncertainty seems to generate more of it. Perhaps, this is the reason why the more one seems to know the more one recognizes the little they do. It may also explain why many of us seem to cling to simplistic or reductionist views seeking comfort away from uncertainty. This provides a path for potential investigation.

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